

STANFORD UNIVERSITY SCHOOL OF MEDICINE

STANFORD MEDICAL CENTER
300 PASTEUR DRIVE, PALO ALTO, CALIFORNIA

DEPARTMENT OF GENETICS

May 24, 1963

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MEMORANDUM

To: Dr. Robert Sears
Dean, Humanities and Sciences

Dr. Robert Alway
Dean, School of Medicine

From: Joshua Lederberg
Professor of Genetics

Subject: Appointment of Dr. Marvin L. Minsky

I am pleased to reinforce Professor Forsythe's proposal for the appointment of Dr. Marvin L. Minsky as Professor of Computer Sciences jointly in the Division of Computer Science and the Department of Genetics.

The evaluation of Dr. Minsky's academic qualifications in the field of his own specialization is properly the responsibility of the Computer Science Division, and I can only add my own concurrence in giving them a very high appraisal. This is based on some very limited previous contact with Dr. Minsky over a period of some years, by my following of some of the work he has been doing in artificial intelligence through publications, and especially by the reinforcement of my previous opinions through two rather intensive sessions of personal discussion within the past several weeks. My impressions as to his remarkable intellectual capabilities are further reinforced by the opinions I have had of him from Professor McCarthy, and from the views of my colleagues in the Medical School who have met him and have been acquainted with him. I think there is very little question that Dr. Minsky is an outstanding contributor in the field of artificial intelligence, whatever controversy there may be concerning the actual present stature of this field of investigation. As several of Dr. Minsky's referees have indicated, if there is anyone who is likely to accomplish a significant advance in artificial intelligence, it is likely to be Dr. Minsky.

To these special qualifications for advanced research in the role of computers, Dr. Minsky adds an unusual breadth of general scientific scholarship, including biology, and a deep interest in forwarding the constructive use of these technological tools for the purposes of medicine.

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I was especially gratified at the critical judgment that Dr. Minsky was able to display in discussing a wide variety of scientific research questions of particular interest in the Genetics Department. Furthermore, his interest in the development of artificial intelligence has not only a general application to the construction of effective experiments in the exobiology program, but he also has a distinct personal interest in helping the pursuit of this application.

In sum, it seems to me that the appointment of Dr. Minsky on this joint basis between the Medical School and the Computation Science Division affords a unique opportunity to further several objectives of great importance to Stanford University, to the Medical School, and to scholarship generally:

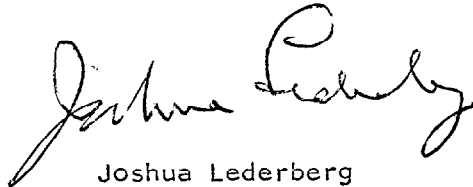
1. A concentration of talent at Stanford University that can help make it a national center in the field of artificial intelligence and non-numerical computation.
2. The establishment of an effective liaison between the Medical School and the Computation Science Division in support of technological developments of unquestioned importance for medicine. Dr. Minsky would fulfill this role not only through his own operations in the two departments, but in a consultative function with other staff in the School of Medicine. He should also have a modest but definite teaching role in the instruction of students and staff in the Medical School in the potentialities of computer applications.
3. Within the Department of Genetics Dr. Minsky would further the exobiology and instrumentation programs through his own work on artificial intelligence and through the support of our broad efforts at the re-vitalizing of analytical instruments through the use of computers. In addition it is important to point out the analogy between the process of biological evolution through spontaneous mutation and natural selection and the perfection of adaptive programs through a similar route. There is in fact an ultimate expectation that a common basic theory of adaptive processes may help to furnish the necessary ideology which is still sadly lacking in the construction of a general biological theory, at the same time that it answers the needs for the rapid controlled evolution of artificial intelligence.
4. The relevance of these investigations to the understanding of natural intelligence is an obvious one and is well understood by the many members of the Neurobiology Group who have been consulted concerning this appointment and likewise give it their enthusiastic support.

It is recognized that Dr. Minsky's assignment as Professor of Computer Science in the Department of Genetics is a somewhat arbitrary one, although entirely appropriate to match existing opportunities, facilities, and needs.

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To the extent that Dr. Minsky's performance matches our expectations, the question should naturally arise as to a more distinctive assignment of mathematical and computational functions within the School of Medicine, but this question can safely be left for further deliberation in the light of events and can hardly be excused as a basis for failing to seize the present opportunity.

A handwritten signature in cursive script, reading "Joshua Lederberg".

Joshua Lederberg
Executive Head
Department of Genetics

P.S. To help illustrate the very vital role that advanced computation is likely to play in the affairs of our department and of medical research in general, I am appending the enclosed document "The Instrumentation Crisis in Biology".